

United States Patent [19]

May

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Jun. 12, 1984**[54] HIGH RESOLUTION LIGHT PEN FOR USE WITH GRAPHIC DISPLAYS**

[75] Inventor: George A. May, R.R. 1, E. Sooke Rd., Sooke, British Columbia, Canada, V0S 1N0

[73] Assignee: George A. May, Sooke, Canada

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[58] Field of Search 250/216, 227, 555, 566-568; 235/471, 472, 473; 340/706-708; 350/415, 562

[56] References Cited**U.S. PATENT DOCUMENTS**

2,552,238	5/1951	Turner et al.	350/415 X
3,271,515	9/1966	Harper	
3,320,671	5/1967	Rickert et al.	350/562 X
3,497,701	2/1970	Dalton	250/227 X
3,505,561	4/1970	Ward et al.	
3,512,037	5/1970	Eckert et al.	
3,543,240	11/1970	Miller et al.	
3,569,617	3/1971	Allen et al.	
3,599,003	8/1971	Price et al.	250/227 X
3,668,312	6/1972	Yamamoto et al.	
3,801,740	4/1974	Buzzard et al.	
3,835,245	9/1974	Pieters	
3,917,955	11/1975	Inuiya	
3,944,988	3/1976	Mayer	
4,017,680	4/1977	Anderson et al.	
4,053,765	10/1977	Kuffer	250/227
4,109,146	8/1978	Hillman	250/227
4,116,529	9/1978	Yamaguchi	

4,367,465 1/1983 Mati et al.

FOREIGN PATENT DOCUMENTS

2628709 12/1977 Fed. Rep. of Germany

OTHER PUBLICATIONS

Bilsback, "Light Pen", IBM Technical Disclosure Bulletin, vol. 15, No. 8, pp. 2522-2523, Jan. 1973.

Primary Examiner—David C. Nelms

Assistant Examiner—Edward P. Westin

Attorney, Agent, or Firm—Majestic, Gallagher, Parsons & Siebert

[57] ABSTRACT

A high resolution light pen comprises a collimation tube slidably mounted within a housing. The collimation tube includes an axially extending channel having a non-reflective surface. A photodetector is fixably mounted within the housing aligned with the channel. A lens is mounted adjacent to the front end of the channel and has a focal length equal to the spacing between the lens and an aligned pixel of the video screen. By this arrangement, all light rays emanating from an aligned pixel and passing through the lens are refracted axially along the channel and directed to the photodetector thereby maximizing the input thereto. The light pen further includes a discrimination circuit which generates computer interrupt signals for reading an address counter. The discrimination circuit generates an interrupt signal when the signal from the photodetector is valid. The interrupt signal is generated at a time which is substantially independent of the slope of the signals thereby reducing the effects of jitter.

13 Claims, 5 Drawing Figures

